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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT H. WOLLENBERG
and THOMAS J. BALK

Appeal No. 2007-0511
Application No. 10/699,508¹

Decided: 20 September 2007

Before FRED E. McKELVEY, *Senior Administrative Patent Judge*, and
ADRIENE LEPIANE HANLON and MICHAEL P. TIERNEY,
Administrative Patent Judges.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

1 A. STATEMENT OF CASE

2 Appellants appeal under 35 U.S.C. § 134 from a final rejection of
3 claims 1-23. We have jurisdiction under 35 U.S.C. § 6(b).

4 Appellants' invention is directed to a high throughput screening
5 method and system for measuring the oxidation stability of lubricating oil

¹ Application 10/699,508 was filed on October 31, 2003. The real party in interest is Chevron Oronite Company LLC.

1 compositions under program control. Claims 1 and 15 are the only
2 independent claims on appeal. They read as follows:

- 3 1. A high throughput method for screening lubricating oil
4 compositions, under program control, comprising:
 - 5 (a) providing a plurality of different lubricating oil
6 composition samples comprising (i) a major amount of at least
7 one base oil of lubricating viscosity and (ii) a minor amount of
8 at least one lubricating oil additive, each sample being in a
9 respective one of a plurality of test receptacles;
 - 10 (b) measuring the oxidation stability of each sample to
11 provide oxidation stability data for each sample; and,
 - 12 (c) outputting the results of step (b).
- 13
- 14 15. A system for screening lubricating oil composition
15 samples, under program control, comprising:
 - 16 a) a plurality of test receptacles, each containing a
17 different lubricating oil composition sample comprising (i) a
18 major amount of at least one base oil of lubricating viscosity
19 and (ii) a minor amount of at least one lubricating oil additive;
 - 20 b) a computer controller for selecting individual
21 samples for testing;
 - 22 c) receptacle moving means responsive to
23 instructions from the computer controller for individually
24 moving the selected samples to a testing station for measuring
25 oxidation stability of the selected samples;
 - 26 d) means for measuring the oxidation stability of the
27 selected samples to obtain oxidation stability data and for
28 transferring the oxidation stability data to the computer
29 controller.

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1 The Examiner relies on the following evidence in rejecting the claims
2 on appeal:

3 Kolosov et al. (“Kolosov”)	2004/0123650 A1	Jul. 1, 2004
4 O’Rear	2003/0100453 A1	May 29, 2003
5 Gatto	2003/0171226 A1	Sept. 11, 2003
6 Perez et al. (“Perez”)	US 5,236,610	Aug. 17, 1993
7 McFarland et al. (“McFarland”)	US 6,541,271	Apr. 1, 2003
8 Smrcka et al. (“Smrcka”)	EP 1,233,361 A1	Aug. 21, 2002
9 Garr et al. (“Garr”)	US 5,993,662	Nov. 30, 1999

10

11 B. ISSUES

12 Have the Appellants sustained their burden of showing that the
13 Examiner erred in rejecting claims 1-6, 10, and 15-19 under 35 U.S.C.
14 § 103(a) as being unpatentable over the combination of Kolosov and O’Rear
15 or Gatto?

16 Have the Appellants sustained their burden of showing that the
17 Examiner erred in rejecting claim 9 under 35 U.S.C. § 103(a) as being
18 unpatentable over the combination of Kolosov and Perez?

19 Have the Appellants sustained their burden of showing that the
20 Examiner erred in rejecting claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a)
21 as being unpatentable over the combination of Kolosov, McFarland, and
22 O’Rear or Gatto?

23 Have the Appellants sustained their burden of showing that the
24 Examiner erred in rejecting claims 11-14 under 35 U.S.C. § 103(a) as being
25 unpatentable over the combination of Kolosov, Smrcka, and O’Rear or
26 Gatto?

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1 Have the Appellants sustained their burden of showing that the
2 Examiner erred in rejecting claims 22 and 23 under 35 U.S.C. § 103(a) as
3 being unpatentable over the combination of Kolosov, Garr, and O'Rear or
4 Gatto?

5 Have the Appellants sustained their burden of showing that the
6 Examiner erred in provisionally rejecting claims 1-3, 6, 11, 12, 15-18, and
7 21-23 under the judicially created doctrine of obviousness-type double
8 patenting as being unpatentable over claims 1-5, 17, 18, and 24-30 of
9 copending Application 10/779,422?

10 Have the Appellants sustained their burden of showing that the
11 Examiner erred in provisionally rejecting claims 1-3 and 10-14 under the
12 judicially created doctrine of obviousness-type double patenting as being
13 unpatentable over claims 20, 22-24, and 26-30 of copending Application
14 10/699,529?

15 Have the Appellants sustained their burden of showing that the
16 Examiner erred in provisionally rejecting claims 1-3, 10-18, 22, and 23
17 under the judicially created doctrine of obviousness-type double patenting as
18 being unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45
19 of copending Application 10/699,507?

20 Have the Appellants sustained their burden of showing that the
21 Examiner erred in provisionally rejecting claims 1, 3, 15, 17, and 22 under
22 the judicially created doctrine of obviousness-type double patenting as being
23 unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application
24 10/699,509?

1 C. FINDINGS OF FACT

2 The following findings of fact are believed to be supported by a
3 preponderance of the evidence. Additional findings of fact as necessary
4 appear in the Analysis portion of the opinion.

5 1. Appellants' Specification

6 The Appellants' invention relates generally to methods for high
7 throughput screening of lubricating oil compositions. Specification, p. 1, ll.
8 6-7.

9 The Appellants define "high throughput" as meaning that a relatively
10 large number of different lubricating oil compositions are rapidly prepared
11 and analyzed. Specification, p. 5, ll. 7-10.

12 The lubricating oil compositions for use in the high throughput
13 screening method include a major amount of base oil of lubricating
14 viscosity. Specification, p. 6, ll. 1-5.

15 The base oil may be any natural or synthetic lubricating base oil.
16 Specification, p. 7, ll. 10-12.

17 The lubricating oil compositions also include at least one lubricating
18 oil additive that can be any presently known or later-discovered additive
19 used in formulating lubricating oil compositions. Specification, p. 11, ll. 17-
20 19.

21 Samples of the lubricating oil compositions can be analyzed for
22 oxidation stability measurements such as oxidation consumption data,
23 deposit data, viscosity data, etc. Specification, p. 23, ll. 5-7.

24 The invention includes a testing station 220 which includes means for
25 testing samples for oxidation stability, i.e., resistance to oxidation.
26 Specification, p. 24, ll. 7-8.

1 According to the Appellants' Specification, various means for
2 oxidation stability testing are known and generally include subjecting a
3 sample to an oxygen environment and measuring the effect of oxidation on
4 the sample over a predetermined period of time. Specification, p. 24, ll. 10-
5 12.

6 The Appellants disclose several oxidation stability tests.
7 Specification, p. 24, l. 13-p. 29, l. 8.

8 The Appellants define "program control" as meaning that the
9 equipment used to provide the plurality of lubricating oil compositions is
10 automated and controlled by a microprocessor or other computer control
11 device. Specification, p. 5, ll. 19-21.

12 2. Kolosov

13 The invention disclosed in Kolosov relates to high throughput screens
14 for evaluating the rheological properties of a material. Kolosov, para.
15 [0002].

16 According to Kolosov, combinatorial chemistry refers generally to
17 methods for synthesizing a collection of chemically diverse materials and to
18 methods for rapidly testing or screening the collection of materials for
19 desirable performance characteristics. Combinatorial chemistry approaches
20 have greatly improved the efficiency of discovery of useful materials.
21 Kolosov, para. [0004].

22 The disclosed invention may be used to screen or test flowable
23 materials such as lubricants. Kolosov, para. [0042].

24 The invention is said to have particular utility in connection with
25 screening a number of different material forms including oils. Kolosov,
26 para. [0043].

1 The Kolosov invention can be used to analyze the resulting properties
2 of a particular flowable sample material or the relative or comparative
3 effects that an additive has upon a particular flowable sample material, e.g.,
4 the effect of a detergent, a flow modifier, or the like. Kolosov, para. [0043].

5 Properties that may be measured include viscosity, density, thermal
6 degradation, aging characteristics, relative or absolute component
7 concentration, chemical composition, presence and amounts of other low-
8 molecular weight impurities in samples, and agglomeration or assemblage of
9 molecules. Kolosov, para. [0065].

10 A plurality of samples may be employed in the disclosed method.
11 Kolosov, para. [0056].

12 The plurality of samples can be a library of samples. Kolosov, para.
13 [0057].

14 The library of samples can comprise product mixtures that are varied
15 with respect to additives. Kolosov, para. [0061].

16 In one embodiment of the invention, an array of materials is screened
17 for viscosity. Kolosov, para. [0029].

18 It is contemplated that a parameter, e.g., a parameter that relates to a
19 rheological property, of a sample is measured at a first time followed by
20 measuring the parameter at a second time and so on during a predetermined
21 period of time. Kolosov, para. [0096].

22 Figure 1 illustrates a system 10 for measuring or determining material
23 properties such as viscosity of a combinatorial library of material samples.
24 Kolosov, para. [0067].

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1 The system 10 includes a stimulus generator 12 that applies power to
2 a probe 14 for applying a stimulus to one or more samples in an array or
3 library of samples. Kolosov, para. [0067].

4 The system 10 also includes a sensor or transducer 20 for monitoring
5 a response of the one or more samples to the stimulus. Kolosov, para.
6 [0067].

7 Typically, the transducer 20, the stimulus generator 12 or both are in
8 communication with a computer sub-system 23 such as a microprocessor or
9 other like computer for manipulating data. For example, the computer sub-
10 system 23 may be employed to receive and store data such as responses of
11 samples, material properties of samples, or the like. Kolosov, para. [0068].

12 The samples may be physically separated from each other, such as in
13 different regions of a substrate or in different sample containers. Kolosov,
14 para. [0056].

15 Kolosov contemplates that the substrate and sample containers can be
16 used with automated sampling and automated substrate-handling devices.
17 Kolosov, para. [0059].

18 In one embodiment, the samples may be moved relative to the probe
19 14. Kolosov, para. [0073].

20 The samples may be moved by an automated system, e.g., a robot
21 arm. Kolosov, para. [0073].

22 A suitable automated system may be a robotic system that has
23 multiple axis range of motion in the orthogonal x, y, z coordinate axes
24 system. Typically, such an automated system would be part of or in
25 communication with the computer sub-system 23. Kolosov, para. [0074].

1 3. O'Rear

2 O'Rear discloses a blend of lube base oils which provide improved
3 oxidation stability, both with and without additives. O'Rear, para. [0001].

4 According to O'Rear, para. [0002]:

5 Finished lubricants used for automobiles, diesel engines,
6 and industrial applications consist of two general components:
7 a lube base oil and additives. In general, a few lube base oils
8 are used to generate a wide variety of finished lubricants by
9 varying the mixtures of individual lube base oils and individual
10 additives. This requires that lube base oils be stored without
11 additives prior to use. Also, lube base oils are an item of
12 commerce and are bought, sold and exchanged. Since the
13 receiver of the lube base oil wants to formulate specific finished
14 lubes, they do not want to receive lube base oils that already
15 contain additives. Thus, lube base oils in almost all
16 circumstances do not contain additives, and are simply
17 hydrocarbons prepared from petroleum or other sources. Thus
18 one general requirement for a lube base oil is that it have good
19 stability during shipment and storage in the absence of
20 additives. In addition, it is desirable that the finished lubricant
21 have as good a stability as possible. In this case, the stability is
22 the resistance to oxidation and formation of deposits during
23 shipment and storage in the presence of additives and other
24 compounds that simulate use in commercial equipment. The
25 preferred lube base oil is one that has a combination of good
26 stability without additives and with additives.

27
28 The lube base oil disclosed in O'Rear may be used in a finished
29 lubricant composition and, thus, may contain one or more additives,
30 depending on the particular use of the oil. O'Rear, para. [0046].

31 O'Rear discloses that the additives are used in amounts which are
32 known to those of skill in the art, preferably about 0.1 to about 40 weight
33 percent of the final lube oil product. O'Rear, para. [0046].

1 O'Rear also discloses that a convenient way to measure the stability
2 of lube base oils is using the Oxidator Test. There are two forms of the test:
3 Oxidator BN and Oxidator A. O'Rear, para. [0031].

4 The Oxidator A test is a measure of oxidation stability during
5 shipping and storage. O'Rear, para. [0031].

6 Another method for studying the stability of lube base oils during
7 storage is to monitor floc and sediment formation when stored in an oven
8 while exposed to air. O'Rear, para. [0034].

9 According to the method disclosed in O'Rear, 50 grams of lube base
10 oil is placed in a loosely capped 7 ounce bottle and placed in an oven at
11 150°F. The sample is inspected periodically for an increase in color or
12 formation of floc or sediments. The test is run for 90 days. O'Rear, para.
13 [0034].

14 4. Gatto

15 According to Gatto, para. [0002]:

16 Lubricating oils used in the internal combustion engines
17 of automobiles or trucks are subjected to a demanding
18 environment during use. Among other adverse effects, this
19 environment can lead to oxidative degradation of the oil. This
20 oxidation of the oil is catalyzed by the presence of certain
21 impurities in the oil, such as iron compounds. This oxidation
22 also is promoted by the elevated temperatures to which the oil
23 is subjected during use. The oxidation of lubrication oils during
24 use is usually controlled in part by the use of antioxidant
25 additives, which may extend the useful life of the oil,
26 particularly by reducing or inhibiting unacceptable increases in
27 the viscosity of the oil.

1 Gatto discloses organomolybdenum compositions having high
2 molybdenum content which are useful as lubricant additives. Gatto, para.
3 [0001].

4 The disclosed organomolybdenum compositions are said to improve
5 deposit control, antioxidant, antiwear, and/or friction modifying properties
6 of lubricant oils. Gatto, para. [0043].

7 The disclosed organomolybdenum additive can be employed in a
8 variety of lubricating oil base stocks, such as derived from natural
9 lubricating oils, synthetic lubricating oils, or mixtures thereof. Gatto, para.
10 [0049].

11 In one embodiment, a lubricant oil can be a formulated oil comprising
12 between about 75 to about 95 weight percent of a base oil of lubricating
13 viscosity, between 0 and 30 weight percent of a polymeric viscosity index
14 improver, between about 5 and 15 weight percent of an additional additive
15 package, and typically a sufficient amount of molybdenum complex to
16 provide at least about 50 ppm of molybdenum to the finished lubricant.
17 Gatto, para. [0051].

18 In Example 2, organomolybdenum complexed product samples 1-9
19 were evaluated as additives in a modified version of the Caterpillar Micro-
20 Oxidation Test. Each additive was added to a separate amount of SAE grade
21 15W-40 fully formulated crankcase oil. Gatto, para. [0064].

22 According to Gatto, the Micro-Oxidation Test is a commonly used
23 technique for evaluating the deposit forming tendencies of a wide variety of
24 passenger car and diesel lubricants as well as mineral and synthetic
25 basestocks. The test measures the oxidative stability and deposit forming
26 tendencies of lubricants under high temperature thin-film oxidation

1 conditions. The ability to easily vary test conditions and the flexibility of
2 presenting test results makes it a valuable research tool for screening a wide
3 variety of lubricant products. Gatto, para. [0065].

4 5. Perez

5 According to Perez, known lubricants subjected to a high temperature
6 environment suffer from severe and rapid thermal and oxidative
7 deterioration. Oxidation of a lubricant produces reaction products which
8 eventually form deposits that are detrimental to oil consumption and engine
9 emissions. Perez, col. 1, ll. 30-35.

10 Antioxidants typically are added to lubricants to combat oxidation.
11 Perez, col. 1, ll. 36-37.

12 The invention disclosed in Perez relates to a liquid composition which
13 can be utilized as a base stock blend for high temperature lubricants and a
14 solid antioxidant additive solubilized for high temperature lubricants. Perez,
15 col. 1, ll. 8-11.

16 Two differential scanning calorimetry methods were used to study
17 oxidation stability. The first was an isothermal method. The second was a
18 programmed temperature method. Perez, col. 9, ll. 1-12.

19 6. McFarland

20 The invention disclosed in McFarland generally relates to methods
21 and apparatus for rapidly screening an array of diverse materials, and in
22 particular, to the combinatorial synthesis and characterization of libraries of
23 diverse materials using IR imaging and spectroscopy techniques.

24 McFarland, col. 1, ll. 28-33.

25 In one embodiment of the invention, the system generally includes a
26 Fourier transform infrared spectrometer. McFarland, col. 15, ll. 65-66.

1 7. Smrcka

2 Smrcka discloses a system and method for new product development,
3 especially for new or customized chemical products. Smrcka, para. [0004].

4 The method includes testing the product and storing details and results
5 of the testing in a computer readable database. Smrcka, para. [0011].

6 The database is available globally from any personal computer having
7 suitable client software installed and suitable network connectivity. Smrcka,
8 para. [0038].

9 8. Garr

10 Garr discloses a method for producing a large chemical library of
11 purified products from a chemical library of raw reaction products. Garr,
12 col. 1, ll. 7-15.

13 In accordance with the invention, reaction tubes, each containing a
14 reaction product, are arranged in an array. Each reaction tube and product is
15 identified by a unique code, such as a bar code, which is optically readable.
16 Garr, col. 4, ll. 3-9.

17 The code is stored in the memory of a digital signal processor on a
18 database. Garr, col. 4, ll. 9-10.

19 The code is used to relate each pure chemical compound to the
20 original reaction product from which it is derived. Garr, col. 3, ll. 26-32.

21 D. PRINCIPLES OF LAW

22 A claimed invention is not patentable if the subject matter of the
23 claimed invention would have been obvious to a person having ordinary skill
24 in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct.
25 1727, 82 USPQ2d 1385 (2007); *Graham v. John Deere Co.*, 383 U.S. 1
26 (1966).

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1 Facts relevant to a determination of obviousness include (1) the scope
2 and content of the prior art, (2) any differences between the claimed
3 invention and the prior art, (3) the level of skill in the art, and (4) any
4 relevant objective evidence of obviousness or non-obviousness. *KSR*, 127 S.
5 Ct. at 1734, 82 USPQ2d at 1389, *Graham*, 383 U.S. at 17-18.

6 The question under 35 U.S.C. § 103 is not merely what the references
7 teach but what they would have suggested to one of ordinary skill in the art
8 at the time the invention was made. All disclosures of the prior art,
9 including unpreferred embodiments, must be considered. *In re Lamberti*,
10 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976).

11 One of ordinary skill in the art is presumed to have skills apart from
12 what the prior art references expressly disclose. *See In re Sovish*, 769 F.2d
13 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). A person of ordinary skill is
14 also a person of ordinary creativity, not an automaton. *KSR*, 127 S. Ct. at
15 1742, 82 USPQ2d at 1397.

16 All that is required for obviousness under 35 U.S.C. § 103 is a
17 reasonable expectation of success. *O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d
18 1673, 1681 (Fed. Cir. 1988).

19 A rejection premised upon a proper combination of references cannot
20 be overcome by attacking the references individually. *In re Keller*, 642 F.2d
21 413, 426, 208 USPQ 871, 882 (CCPA 1981).

22 If the word “means” appears in a claim element in combination with a
23 function, it is presumed to be a means-plus-function element to which
24 35 U.S.C. § 112, sixth paragraph, applies. *Al-Site Corp. v. VSI Int'l Inc.*,
25 174 F.3d 1308, 1318, 50 USPQ2d 1161, 1166 (Fed. Cir. 1999).

1 The first step in construing a “means-plus-function” limitation is to
2 determine the function of the limitation. The second step is to determine the
3 corresponding structure described in the specification and equivalents
4 thereof. Structure is “corresponding structure” only if the specification or
5 prosecution history clearly links or associates that structure to the function
6 recited in the claim. *Medtronic Inc. v. Advanced Cardiovascular Sys. Inc.*,
7 248 F.3d 1303, 1311, 58 USPQ2d 1607, 1614 (Fed. Cir. 2001).

8 Claims are not read in a vacuum but rather must be read in the light of
9 the specification. *In re Prater*, 415 F.2d 1393, 1404, 162 USPQ 541, 550
10 (CCPA 1969).

11 Nothing in the rules or in jurisprudence requires the fact finder to
12 credit unsupported or conclusory assertions. *Rohm and Haas Co. v. Brotech*
13 *Corp.*, 127 F.3d 1089, 1092, 44 USPQ2d 1459, 1462 (Fed. Cir. 1997).

14 E. ANALYSIS

15 1. Claims 1-6, 10, and 15-19

16 The Examiner finds that Kolosov does not teach that the disclosed
17 high throughput method screens lubricants for oxidation stability by either
18 determining the time required for a lubricant sample to consume a
19 predetermined amount of oxygen or measuring the amount of deposits
20 formed by a lubricant sample exposed to oxidation reaction conditions.

21 Final Office Action mailed November 4, 2005 at 8; Answer at 7.

22 The Examiner finds that O’Rear teaches that the oxidation stability of
23 a lubricant oil sample can be determined by exposing the sample to an
24 oxidative atmosphere and determining the time required for the sample to
25 absorb one liter of oxygen. The Examiner finds that Gatto teaches a method
26 for determining the oxidation stability of a lubricant oil composition by

1 measuring the deposits formed by the sample under high-temperature thin-
2 film oxidation conditions. Final Office Action mailed November 4, 2005 at
3 8-9; Answer at 7.

4 The Examiner concludes (Final Office Action mailed November 4,
5 2005 at 9; Answer at 7):

6 Based upon the combination of Kolosov et al and either
7 O'Rear or Gatto, it would have been obvious to one of ordinary
8 skill in the art at the time of the instant invention to screen the
9 lubricant/additive compositions in the combinatorial array
10 taught by Kolosov et al for oxidation stability since Kolosov et
11 al teach that the plurality of samples in the array are screened
12 for various material characteristics, and both O'Rear and Gatto
13 teach that it is common to screen lubricating oil compositions
14 for their oxidation stability by either determining the time
15 required for a lubricant sample to consume a predetermined
16 amount of oxygen or by measuring the amount of deposits
17 formed by a lubricant sample exposed to oxidation reaction
18 conditions.

19 a. Step of measuring oxidation stability

20 Claim 1 recites a high throughput method for screening lubricating oil
21 compositions, **under program control**, comprising the step of "measuring
22 the oxidation stability of each sample to provide oxidation stability data for
23 each sample."

24 The Appellants argue that O'Rear and Gatto do not disclose or
25 suggest the invention of claim 1. Appeal Brief at 10-11, 12. Specifically,
26 the Appellants argue that neither O'Rear nor Gatto discloses, motivates, or
27 suggests an automatic high throughput method operated under program
28 control, i.e., one that automatically screens lubricating oil compositions for
29 oxidation stability. Appeal Brief at 14.

1 The Appellants appear to be arguing that the phrase “under program
2 control” in claim 1 requires an automated step of measuring oxidation
3 stability. However, according to the Appellants’ Specification, “program
4 control” is defined as meaning that the equipment used to provide the
5 plurality of lubricating oil compositions is automated, **NOT** that the step of
6 measuring oxidation stability is automated. Specification, p. 5, ll. 19-21.
7 For this reason, the Appellants’ argument is not persuasive.

8 b. Means for measuring oxidation stability

9 Claim 15 recites a system for screening lubricating oil composition
10 samples, under program control, comprising “d) means for measuring the
11 oxidation stability of the selected samples to obtain oxidation stability data
12 and for transferring the oxidation stability data to the computer controller.”

13 The Examiner concludes that the means recited in part d) invokes
14 35 U.S.C. § 112, sixth paragraph. Answer at 11. The Appellants do not
15 challenge this conclusion in the Reply Brief.

16 According to the Appellants’ Specification, the “means for measuring
17 the oxidation stability of the selected samples to obtain oxidation stability
18 data” include “subjecting the sample to an oxygen environment and
19 measuring the effect of oxidation upon the sample over a predetermined
20 period of time.” Specification, p. 24, ll. 10-12.

21 The Appellants disclose several oxidation stability tests, including the
22 Lube Oil Oxidator test method (Specification, p. 24, l. 13-p. 25, l. 16) and
23 the thin film oxygen uptake test method (Specification, p. 28, l. 19-p. 29, l.
24 8).

25 According to the Appellants’ Specification the means “for transferring
26 the oxidation stability data to the computer controller” are electrical or

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1 optical signals transmitted via signal transmission line 223 to computer
2 controller 230. Specification, p. 24, ll. 8-10.

3 The Appellants argue that O'Rear and Gatto do not disclose the
4 invention of claim 15. Appeal Brief at 11, 12. Specifically, the Appellants
5 argue that neither O'Rear nor Gatto discloses, motivates, or suggests an
6 automatic high throughput system operated under program control, i.e., one
7 that automatically screens lubricating oil compositions for oxidation
8 stability. Appeal Brief at 14.

9 We find that two aspects of the appellants' invention as recited in
10 claim 15 are automated. First, the equipment used to provide the plurality of
11 lubricating oil compositions is automated. Specification, p. 5, ll. 19-21
12 (defining "program control"). Second, the means for transferring the
13 oxidation stability data to the computer controller is automated.
14 Specification, p. 24, ll. 8-10.

15 It is of no moment that Gatto and O'Rear do not disclose an
16 automated system within the scope of claim 15. The Examiner merely relies
17 on Gatto and O'Rear to establish that the oxidation stability tests disclosed
18 therein were known to be useful for testing the oxidation stability of
19 lubricating oil compositions. Answer at 14, 15. Gatto and O'Rear also
20 establish that one of ordinary skill in the art would have recognized the
21 importance of testing lubricating oil compositions for oxidation stability.

22 The Examiner relies on Kolosov as teaching a high-throughput,
23 automatic apparatus for screening lubricating oil compositions. See
24 Kolosov, para. [0059] (contemplating an automated sampling device);
25 Kolosov, para. [0068] (disclosing an automated means for transferring data

1 to a computer). Significantly, the Appellants have not challenged this
2 finding in the Appeal Brief.

c. Claimed lubricant compositions

4 Claim 1 is directed to a high throughput method for screening
5 lubricating oil compositions comprising “(i) a major amount of at least one
6 base oil of lubricating viscosity and (ii) a minor amount of at least one
7 lubricating oil additive.” Similarly, claim 15 is directed to a system for
8 screening lubricating oil composition samples comprising “(i) a major
9 amount of at least one base oil of lubricating viscosity and (ii) a minor
10 amount of at least one lubricating oil additive.”

11 The Examiner found that compounds analyzed by the method and
12 system disclosed in Kolosov can be lubricants having an additive therein.
13 The Examiner found that “[i]t is inherent that in a lubricant composition
14 having an additive therein that the base lubricant oil is present in a major
15 amount while the additive is present in a lesser amount.” Final Office
16 Action mailed November 4, 2005 at 13.

17 The Appellants argue that lubricating oil compositions do not have to
18 contain a major amount of at least one base oil of lubricating viscosity and a
19 minor amount of at least one lubricating oil additive. The Appellants argue
20 that a lubricating oil composition can be a concentrate that contains a major
21 amount of a lubricating oil composition and a minor amount of base oil of
22 lubricating viscosity as a diluent for the concentrate. Appeal Brief at 10.

23 In response, the Examiner finds that an additive, by definition, means
24 any substance incorporated into a base material, usually in a low
25 concentration, to perform a specific function, i.e., a stabilizer, preservative,
26 dispersing agent, antioxidant, etc. For support, the Examiner points to a

1 definition of “additive” in *The Condensed Chemical Dictionary* 20 (10th ed.
2 1981). Answer at 11. The Appellants do not challenge this finding in the
3 Reply Brief.

4 Kolosov discloses a high throughput method for screening many
5 flowable materials such as lubricants. Kolosov, para. [0042]. Kolosov
6 discloses that the high throughput method can be used to analyze the
7 resulting properties of a particular flowable material or the relative or
8 comparative effects that an additive has upon a particular flowable material,
9 e.g., the effect of a detergent, a flow modifier, or the like. Kolosov, para.
10 [0043]. Based on these teachings we find that Kolosov would have
11 reasonably suggested a high throughput method for testing lubricants
12 containing an additive.

13 Kolosov does not expressly disclose that the lubricants comprise a
14 major amount of at least one base oil of lubricating viscosity and a minor
15 amount of at least one lubricating oil additive. However, the record before
16 us establishes that one of ordinary skill in the art would have understood
17 “additive” to mean any substance incorporated into a base material, usually
18 in a low concentration. See *The Condensed Chemical Dictionary* at 20; see
19 also O’Rear, paras. [0002] and [0046]; Gatto, para. [0051]. We find that one
20 of ordinary skill in the art would have reasonably expected the lubricant
21 compositions in Kolosov, comprising a lubricant and an additive, to have a
22 major amount of a base oil and a minor amount of an additive.

d. Conclusion

24 For the reasons set forth above, it is reasonable to conclude that the
25 method of claim 1 and the system of claim 15 would have been obvious to

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1 one of ordinary skill in the art in view of the combined teachings of Kolosov
2 and O'Rear or Gatto.

3 2. Claim 9

4 Claim 9 depends from claim 1 and recites that the step of measuring
5 the oxidation stability of each sample is determined by differential scanning
6 calorimetry.

7 The Examiner finds that Kolosov does not teach that the disclosed
8 lubricants can be screened for oxidation stability using differential scanning
9 calorimetry. The Examiner finds that Perez teaches that differential
10 scanning calorimetry can be used to determine the oxidation stability of
11 liquid lubricant compositions containing antioxidant additives. The
12 Examiner concludes that the invention of claim 9 would have been obvious
13 to one of ordinary skill in the art in view of the combined teachings of
14 Kolosov and Perez. Final Office Action mailed November 4, 2005 at 9-10;
15 Answer at 7-8.

16 The Appellants do not challenge the Examiner's findings or
17 conclusion of obviousness as to claim 9 in the Appeal Brief. Rather, the
18 Appellants argue that Perez does not cure the deficiencies of Kolosov as to
19 claim 1. Appeal Brief at 15-16.

20 For the reasons set forth above, the teachings of Kolosov and O'Rear
21 or Gatto render obvious the subject matter of claim 1.² Therefore, there are
22 no deficiencies that Perez must cure.

23 3. Claims 7, 8, 20, and 21

² Since claim 9 depends from claim 1, it is readily apparent that claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Perez, and O'Rear or Gatto.

1 Claim 7 depends from claim 1 and recites that the step of measuring
2 the oxidation stability of each sample comprises using infrared spectroscopy.

3 The Examiner finds that Kolosov fails to teach that the disclosed
4 lubricants can be screened for oxidation stability using infrared
5 spectroscopy. The Examiner finds that McFarland discloses that infrared
6 spectroscopy may be used to quantify the stability of materials in a
7 combinatorial array and characterize chemical reactions. The Examiner
8 concludes that the invention of claim 7 would have been obvious to one of
9 ordinary skill in the art in view of the combined teachings of Kolosov,
10 McFarland, and O'Rear or Gatto. Final Office Action mailed November 4,
11 2005 at 10-11; Answer at 8-9.

12 The Appellants do not challenge the Examiner's findings or
13 conclusion of obviousness as to claim 7 in the Appeal Brief. Rather, the
14 Appellants argue that McFarland does not cure the deficiencies of Kolosov,
15 O'Rear, and Gatto as to claim 1. Appeal Brief at 16-18.

16 For the reasons set forth above, the teachings of Kolosov and O'Rear
17 or Gatto render obvious the subject matter of claim 1. Therefore, there are
18 no deficiencies that McFarland must cure.

19 4. Claims 11-14

20 Claim 11 depends from claim 1 and recites that the step of outputting
21 comprises storing the results of step (b) on a data carrier.

22 The Examiner finds that Smrcka teaches a method of testing a new
23 chemical product and storing the results in a data carrier such as a computer
24 readable medium. Final Office Action mailed November 4, 2005 at 11;
25 Answer at 9. We also find that Kolosov stores data such as responses of

1 samples, material properties of samples, or the like on a computer sub-
2 system 23. Kolosov, para. [0068].

3 The Examiner concludes that the invention of claim 11 would have
4 been obvious to one of ordinary skill in the art in view of the combined
5 teachings of Kolosov, Smrcka, and O'Rear or Gatto. Final Office Action
6 mailed November 4, 2005 at 11; Answer at 9-10.

7 The Appellants do not challenge the Examiner's findings or the
8 Examiner's conclusion of obviousness as to claim 11 in the Appeal Brief.
9 Rather, the Appellants argue that Smrcka does not cure the deficiencies of
10 Kolosov, O'Rear, and Gatto as to claim 1. Appeal Brief at 18-19.

11 For the reasons set forth above, the teachings of Kolosov and O'Rear
12 or Gatto render obvious the subject matter of claim 1. Therefore, there are
13 no deficiencies that Smrcka must cure.

14 5. Claims 22 and 23

15 Claim 22 depends from claim 15 and recites that each test receptacle
16 has a bar code affixed to an outer surface thereof.

17 The Examiner finds that the containers holding lubricant samples in
18 Kolosov do not have a bar code attached thereto. The Examiner finds that
19 Garr teaches that it is common in a combinatorial library to identify
20 individual containers by a unique code, such as a bar code, which is optically
21 readable. The Examiner finds that the code can be stored in the memory of a
22 digital signal processor on a database. Final Office Action mailed
23 November 4, 2005 at 12; Answer at 10.

24 The Examiner concludes that the invention of claim 22 would have
25 been obvious to one of ordinary skill in the art in view of the combined

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1 teachings of Kolosov, Garr, and O'Rear or Gatto. Final Office Action
2 mailed November 4, 2005 at 12; Answer at 10.

3 The Appellants do not challenge the Examiner's findings or the
4 Examiner's conclusion of obviousness as to claim 22 in the Appeal Brief.
5 Rather, the Appellants argue that Garr does not cure the deficiencies of
6 Kolosov, O'Rear, and Gatto as to claim 15. Appeal Brief at 19-20.

7 For the reasons set forth above, the teachings of Kolosov and O'Rear
8 or Gatto render obvious the subject matter of claim 15. Therefore, there are
9 no deficiencies that Garr must cure.

10 6. Double patenting rejections

11 The Appellants do not challenge the double patenting rejections on
12 appeal. Rather, the Appellants state, "Upon resolution of all outstanding
13 issues remaining in this application, Appellants will submit a Terminal
14 Disclaimer to obviate the provisional rejections." Appeal Brief at 21.

15 F. CONCLUSIONS OF LAW

16 The Appellants have not sustained their burden of showing that the
17 Examiner erred in rejecting claims 1-6, 10, and 15-19 under 35 U.S.C.
18 § 103(a) as being unpatentable over the combination of Kolosov and O'Rear
19 or Gatto.

20 The Appellants have not sustained their burden of showing that the
21 Examiner erred in rejecting claim 9 under 35 U.S.C. § 103(a) as being
22 unpatentable over the combination of Kolosov and Perez.

23 The Appellants have not sustained their burden of showing that the
24 Examiner erred in rejecting claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a)
25 as being unpatentable over the combination of Kolosov, McFarland, and
26 O'Rear or Gatto.

1 The Appellants have not sustained their burden of showing that the
2 Examiner erred in rejecting claims 11-14 under 35 U.S.C. § 103(a) as being
3 unpatentable over the combination of Kolosov, Smrcka, and O'Rear or
4 Gatto.

5 The Appellants have not sustained their burden of showing that the
6 Examiner erred in rejecting claims 22 and 23 under 35 U.S.C. § 103(a) as
7 being unpatentable over the combination of Kolosov, Garr, and O'Rear or
8 Gatto.

9 The Appellants have not sustained their burden of showing that the
10 Examiner erred in provisionally rejecting claims 1-3, 6, 11, 12, 15-18, and
11 21-23 under the judicially created doctrine of obviousness-type double
12 patenting as being unpatentable over claims 1-5, 17, 18, and 24-30 of
13 copending Application 10/779,422.

14 The Appellants have not sustained their burden of showing that the
15 Examiner erred in provisionally rejecting claims 1-3 and 10-14 under the
16 judicially created doctrine of obviousness-type double patenting as being
17 unpatentable over claims 20, 22-24, and 26-30 of copending Application
18 10/699,529.

19 The Appellants have not sustained their burden of showing that the
20 Examiner erred in provisionally rejecting claims 1-3, 10-18, 22, and 23
21 under the judicially created doctrine of obviousness-type double patenting as
22 being unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45
23 of copending Application 10/699,507.

24 The Appellants have not sustained their burden of showing that the
25 Examiner erred in provisionally rejecting claims 1, 3, 15, 17, and 22 under
26 the judicially created doctrine of obviousness-type double patenting as being

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1 unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application
2 10/699,509.

3 G. DECISION

4 The rejection of claims 1-6, 10, and 15-19 under 35 U.S.C. § 103(a) as
5 being unpatentable over the combination of Kolosov and O'Rear or Gatto is
6 affirmed.

7 The rejection of claim 9 under 35 U.S.C. § 103(a) as being
8 unpatentable over the combination of Kolosov and Perez is affirmed.

9 The rejection of claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a) as
10 being unpatentable over the combination of Kolosov, McFarland, and
11 O'Rear or Gatto is affirmed.

12 The rejection of claims 11-14 under 35 U.S.C. § 103(a) as being
13 unpatentable over the combination of Kolosov, Smrcka, and O'Rear or Gatto
14 is affirmed.

15 The rejection of claims 22 and 23 under 35 U.S.C. § 103(a) as being
16 unpatentable over the combination of Kolosov, Garr, and O'Rear or Gatto is
17 affirmed.

18 The provisional rejection of claims 1-3, 6, 11, 12, 15-18, and 21-23
19 under the judicially created doctrine of obviousness-type double patenting as
20 being unpatentable over claims 1-5, 17, 18, and 24-30 of copending
21 Application 10/779,422 is affirmed.

22 The provisional rejection of claims 1-3 and 10-14 under the judicially
23 created doctrine of obviousness-type double patenting as being unpatentable
24 over claims 20, 22-24, and 26-30 of copending Application 10/699,529 is
25 affirmed.

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1 The provisional rejection of claims 1-3, 10-18, 22, and 23 under the
2 judicially created doctrine of obviousness-type double patenting as being
3 unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45 of
4 copending Application 10/699,507 is affirmed.

5 The provisional rejection of claims 1, 3, 15, 17, and 22 under the
6 judicially created doctrine of obviousness-type double patenting as being
7 unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application
8 10/699,509 is affirmed.

9 No time period for taking any subsequent action in connection with
10 this appeal may be extended under 37 C.F.R. § 1.136(a).

11

12 **AFFIRMED**

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